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Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) are metrics used to assess the performance of a diagnostic test. These metrics are often presented in a 2x2 contingency table, which summarizes the outcomes of a diagnostic test compared to the true condition of the individuals being tested.

Let's define these terms and illustrate them using a 2x2 contingency table:

1. **Sensitivity (True Positive Rate or Recall):**
   - Sensitivity measures the proportion of true positives among all individuals who actually have the condition.
   - It is calculated as: Sensitivity $= \frac{\text{True Positives}}{\text{True Positives + False Negatives}}$
2. **Specificity (True Negative Rate):**
   - Specificity measures the proportion of true negatives among all individuals who do not have the condition.
   - It is calculated as: Specificity $= \frac{\text{True Negatives}}{\text{True Negatives + False Positives}}$
3. **Positive Predictive Value (Precision):**
   - PPV measures the proportion of true positives among all individuals who tested positive.
   - It is calculated as: PPV $= \frac{\text{True Positives}}{\text{True Positives + False Positives}}$
4. **Negative Predictive Value:**
   - NPV measures the proportion of true negatives among all individuals who tested negative.
   - It is calculated as: NPV $= \frac{\text{True Negatives}}{\text{True Negatives + False Negatives}}$

Here's a 2x2 contingency table for better illustration:

		Actual Positive	Actual Negative
Test Positive	True Positive (TP)	False Positive (FP)	
Test Negative	False Negative (FN)	True Negative (TN)	

Using this table, the formulas for sensitivity, specificity, PPV, and NPV can be applied based on the counts in each cell.

Remember that these metrics are essential for evaluating the overall performance and reliability of a diagnostic test.